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Vodafone Portugal entry in the Pay-TV Market:

What is the Potential for Profitability?

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Introduction[1]

Purpose: This paper is intended to be a case study assessing Vodafone Portugal's potential for profitability in the Portuguese pay-TV market. The paper is subdivided into a case presentation and a case discussion. The purpose of the case discussion is twofold. A first part covers an analysis on the key factors affecting market structural attractiveness and its impact on margins. A second part assesses the potential for Vodafone Portugal to achieve a sustainable competitive advantage in the market. Here, two research streams are applied. On the one hand, the *resource-based view* is followed, focusing on firms' specific resources as a determinant of competitive advantage. On the other hand, it is analysed the extent to which *privileged market positions* from Vodafone Portugal or the incumbents can be a source of competitive advantage.

Motivation: We are witnessing the first wave of mobile network operators entering in pay-TV markets. Indeed, Vodafone Portugal is the first subsidiary of the Vodafone Group that pursues this type of horizontal diversification through organic growth. Apart from the novelty of the strategic decision, the permanent change experienced in the electronic communications industry and its impact on sources of competitive advantage and firms' business models, represented a critical academic stimulus.

[1] The case presentation provides all the relevant materials for case discussion.

Case Presentation

1. The Strategic Decision

In July 17th, 2009, António Carrapatoso, Vodafone Portugal's CEO, formally announces its shareholders what would be the last milestone of its period in office. The company officially launched its pay-TV service, named Vodafone Casa TV. Since 2007, when the company made the first steps outside mobile communications, Carrapatoso has claimed that Vodafone was to be a "global electronic communications operator" responding to growing customer's communication needs.[2] The service became first available only for Vodafone Portugal's internet service consumers and was marketed in bundle with both fixed telephony and fixed internet, with no added fee till the end of the year. In September 29th, 2009, Vodafone Casa TV became available to the whole market, free of charge till July 2010.[3] Equity analysts at BPI, while believing Vodafone Portugal's entry would "intensify pressure on margins" did not see it as a "significant threat to incumbents in pay-TV".[4] The argument was supported on poor technology choice and market structure.

2. The Portuguese Electronic Communications Industry

The electronic communications industry is subdivided into four markets: pay-TV, internet access, fixed telephony and mobile telecommunications. During the past decade the industry has undergone significant technological change, deregulation and restructuring. In 1994, Portugal Telecom, a state-owned firm, was created, resulting from the merger of the two firms that had separately managed the network for terrestrial television broadcasting (that is, the traditional free TV format) and the fixed telephony business. Concerning the latter, Portugal Telecom (PT) held the unique Copper network to offer fixed telephony services, and thus enjoyed a monopoly (**Exhibit 1** sketches the network). Still during 1994, PT built a Cable

[2] Vodafone Portugal, 2007 Annual Report, p.29.
[3] In case of contract termination the customer pays the boxes renting fees.
[4] 'Serviço de TV da Vodafone pode pressionar Portugal Telecom e ZON', *Diário Económico*, July 20, 2009.

network to offer the first pay-TV service in Portugal. In the pay-TV market, the viewer pays a monthly or per-content-viewed fee in access to a wider variety of channels than in traditional TV. In the late 90's, both markets experienced the entry of private companies. Nevertheless, none was able to challenge PT's dominant position.

Moreover, the late 90's brought the so-called *"Technological Convergence"* phenomena; a critical milestone for the industry. This term characterises the convergence of services provided under Cable and Copper networks. The introduction of modems in extremities of wired networks allowed for a converged packet of digitalized video, voice and other data types to be simultaneous transmitted over both networks. In practice, platform competition was possible and firms previously operating in separated markets were spurred on to compete against each other. The regulatory authorities followed the technologic shift and since the *1996 US Act* deregulation of the industry intensified all over the world. In Portugal, the regulator response was delayed. In 2000, the last phase of PT privatization was completed and in 2001 the firm launched the first wholesale offer. Wholesale offers in electronic communications refer to the possibility that other companies have of renting PT's wired network to offer independent voice and fixed internet services in non-discriminatory terms. The goal was to avoid that non-ownership of transmission network would meant preclusion from offering fixed telephony and fixed internet services. Despite this, PT maintained a dominant position in pay-TV, fixed telephony and internet access services. In November 2007, Portugal Telecom Multimedia, the PT business unit that owned the Cable network and managed the pay-TV service, spun off from the group.

For the time being, the industry is reaching another wave of *Technical Convergence*: the convergence between mobile telecommunications and fixed networks. The *Long-Term-Evolution* (LTE) technology, delivering 300Mbps bandwidth to mobile phones, will conduct this change. Industry experts and leading firms in network technology predict customers' needs in electronic communications to be served across both networks through integrative

applications.[5] The ability to design applications that connect TV, internet and mobile phone will determine the success of firms in the electronic communications industry.

3. Pay-TV Transmission Networks[6]

Pay-TV can be transmitted under Cable, Copper, Fibre and Satellite networks. The two biggest players in the market are ZON, previous Portugal Telecom Multimedia, and PT which launched a new pay-TV service in early 2008. The former holds a country-wide Cable network. The latter holds both a Copper network reaching 700,000 potential viewers and a Fibre network that is expected to connect 1 million households by the end of 2009.[7] Sonaecom, a smaller player, is currently building a Fibre network to connect 1 million households by the end of 2011.

Copper and Fibre Networks are used by PT simultaneously. Both permit the development of *Internet Protocol Television* that allows for integrative services between TV and internet, as well as two-sided communication between service providers and viewers. However, with the current technology, ADSL2+, PT's Copper network bandwidth is constrained to a maximum limit of 24Mbps being able to be further upgraded for 50Mbps. This is particular problematic has each TV-set consumes around 6Mbps. The PT Copper network can provide these speed limits to only 700,000 customers, as the transmission is severely reduced for high wiring distances. Also, transmission is more sensible to interferences than any other network. While the roll-out of Fibre networks sets the bandwidth limit to 2.48Gbps, it increases resistance to external degradation and interference, as well.[8] In July, 2009, around 470,000 households were subscribing pay-TV through Fibre or Copper, an increase of 14.3% from the previous quarter.

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[5] Charles Leadbeter, *Congresso das Comunicações 09 – APDC,* Lisboa, November 19, 2009; 'LTE – Long Term Evolution', *edited by Motorola* , accessed on-line on September 2009; 'Long –Term Evolution (LTE): The vision beyond 3G', *edited by Nortel* , accessed on-line on September 2009.

[6] Data on networks' bandwidth taken from: Ovum, 2008, p.129.

[7] 'PT lança MEO Satélite e até final do ano chega a 90% das famílias portuguesas', *Ciência Hoje*, March 2, 2008, http://www.cienciahoje.pt/index.php?oid=25851&op=all, accessed November 2009

[8] This is the limit under available technologies for GPON, that type of Fibre network under development in Portugal, but the virtual limit is 40Gbps or 40.000Mbps.

The only countrywide Cable network is held by ZON which is upgrading it to the EURODOCSIS3.0 protocol. This means speeds up to 400Mbps, as well as, the progressive end of both Cable's constraint to one-sided communication and limitations on providing integrative services with internet. The speed provided is more trustful and the transmission has lower interference than in Copper networks. Its long-term value is the preparation for a smooth transition into a possible Fibre network where the skills and infrastructure already built can be reused. In July, 2009, around 1.45 million subscribers were using this network to access pay-TV. The number of subscribers decreased 2.9% year-on-year and is declining for the 4th consecutive quarter.

Satellite networks are used by ZON and PT only as an alternative to reach locations where, for the low density and remoteness, wired networks are not profitable. It has limited room for channels, two-way communication and interactivity with internet. In July 2009, 597,000 households were subscribing pay-TV through Satellite, an increase of 13.7% year-on-year. This increasing trend is expected to stay since the roll-out of Fibre networks is, at the most, economically viable for around 1 million potential households.

4. The Portuguese Market For Pay-TV

As of July 2009, ZON and PT hold 68.4% and 18.7% of market share, respectively (**Exhibit 2**). There are 2.37 million subscribers, 10.9% more than in July 2008 and 2% more than in April 2009. The potential customer base is estimated at 4.9 million, residential and business customers.[9] The penetration rate of pay-TV per total number of households is still low when comparing to other European Union countries.[10] Accordingly, studies on the industry predict a steady increase in the number of subscribers, reaching 2.5 million by 2012.[11] In the 1st semester of 2009 the monthly Average Revenue per Unit or Customer (ARPU) for fixed

[9] WIK-Consult Report, 2008, p.148.
[10] *TeleSatelite,* no.238, http://www.telesatelite.net/entrevista.asp?cid=entrevista&id=93, September 2009, accessed on September 2009.
[11] Ovum Consulting, 2008, p.351

services[12] for ZON and PT was €29.9 and €33.1, respectively. Indeed, it increased from last quarters despite the tendency for ARPU tightening in fixed telephony and fixed internet services. A recent survey conducted on 25 firms related to the electronic communications industry, concluded that it is in pay-TV and internet services where they see most potential for growth.[13] Firms have seen in pay-TV a way to escape commoditization in other electronic communications markets. Even considering that the basic pay-TV service, consisting only of channels, has low differentiation potential, firms have insisted on avoiding price competition. According to Zeinal Bava, CEO of PT, its pay-TV service "intends to be very different from ZON's one, being that the reason why PT has not entered in the market to compete on prices".[14] Customized content, interactive services (Video-on-Demand, Pay-per-View, Games, etc..) and integrative applications (between TV, mobile phone and internet) while generating new revenue streams have *de facto* potential for differentiation. The high bandwidth speeds associated to Fibre will enhance the effects described above, giving a boundless potential for customization and thus, differentiation.[15]

Since early 2007, there has been a surge in pay-TV services sold through bundles, namely, joining it with fixed telephony and fixed internet services. This type of bundle is called *triple-play*. At the end of 2008, the number of customers subscribing this service was 343,000, more 91.3% than one year before. As the bundles are priced significantly lower than services bought independently and have the convenience advantages of a one-time shop, more and more customers are expected to adhere to them. For the players this has a negative impact on prices. Bundles can be sold as much as a 40% discount.[16] The prices for pay-TV in Portugal have been decreasing in comparison with UE27 average level, and at the end of 2008 *triple play* prices were in some cases 27% lower.[17] Even accounting to this, market analysts forecast a

[12] Fixed internet access, fixed telephony and pay-TV. There are customers subscribing one, two or three services.
[13] Deloitte, 2009, p.10.
[14] 'Guerra de velocidades: Zeinal Bava não tem medo da oferta da Zon', *www.ionline.com*, May 15, 2009.
[15] Ovum Consulting, 2008, p.119.
[16] Rute Marques,'Triple Play para todos'*, Jornal de Negócios*, August 7, 2009.
[17] Van Dijk Mnagament Consultants, 'Broadband Internet Access Costs', December 2008.

promising short-term future for pay-TV: a 9.3% compound annual growth rate for the market till 2012.[18]

For industry observers, a major long-term threat to the market lies on the growth of content sharing websites, such as YouTube and Google, both in terms of stolen ARPU and advertising revenues.[19] This form of content sharing through the internet is an example of *Internet TV*. It is open to any rights holder, being it an individual creating a video for a very small audience or a larger content aggregator reaching a Global public. Moreover, it permits individualized advertising and with Fibre, quality of transmission disadvantages related with bandwidth speed will disappear. For now pay-TV providers worldwide have successfully faced up this threat developing hybrid services, providing *Internet TV* access through TV-sets. Market analysts do not predict an entire substitution of pay-TV but ARPU from payable Video-on-Demand and Pay-per-View content will undoubtedly suffer.[20]

The electronic communications industry, in general, and pay-TV, in particular, are under permanent and unpredictable technological change. That change is observable in the exponential increase in bandwidth speed required by customers. Several studies place the barrier of a widespread requirement for 100Mbps around 2011 and 2012 (**Exhibit 3**).[21]

Network Owners such as PT and ZON, have mostly inflexible cost structures.[22] Once the networks are rolled-out major expenses are concerned with network upgrading, R&D, content production or procurement, quality of service monitoring, repairing, billing and marketing communications expenses. The marketing communications costs are particularly large for

[18] 'Mercado da TV paga deverá crescer 9,3% ao ano até 2012', PwC Consultancy study, *Diário Económico,* September 09, 2008.
[19] Francisco Melo, Director of APRITEL (association of the electronic communications industry's firms), interview by the author, Lisboa, November 07, 2009.
[20] Adam Daum, 'Pay-TV Providers Face Up to Over-the-Top TV', *Gartner Industry Research*, http://www.gartner.com/DisplayDocument?id=1038013, published on June 24, 2009, assessed July 2009.
[21] 'FTTH Worldwide Market and Technology Forecast 2006-2011*', Heavy Reading*, Vol.4, No.9, June 2006. See also on J. Nielsen, *'Nielsen's Law of Internet Bandwidth'*, http://www.useit.com/alertbox/980405.html, published April 5, 1998.
[22] ANACOM,'State of Communications 2008', July 22, 2009, p.290.

entrants. For instance, during 2008, PT's effort on creating awareness for its pay-TV service mounted more than €30 million. The relative weight of marginal costs is expected to decrease more as Fibre networks experience much lower operational costs (**Exhibit 4**)**.** The fact that service providers' expenses are essentially fixed, makes the cost of selling for the marginal customer low. This effect is enhanced by the fact that installed networks connect a large number of households in excess of current subscribers. For Cable networks, the number of subscribers to connected households ratio is less than 40%.[23]

Demand-side characteristics of pay-TV[24]

When customers choose a pay-TV provider, confidence on the firm and brand image in terms of innovation, firstly, and perceived technical quality, secondly, are the preferred factors. On average, about 44% of customers are said to exhibit a low price-sensitivity. Moreover, 72.8% of PT, and 57.1% of ZON customers do not show openness to change supplier. Even so, among the electronic communication markets, pay-TV has the lower level of customer satisfaction and loyalty. Also, pay-TV providers have the lower levels of perceived brand image in the electronic communications industry. Customers changing of pay-TV provider face some switching costs. The choice of a service through Copper or Fibre networks implies the installation of new in-house wiring from the telephone to the TV. This is due to the fact that as the first pay-TV services were provided through Cable networks, TV-sets are not necessarily located near telephones. On the other hand, the services are contracted through 12-month periods, 24 in some cases. Early terminations not relying on service unconformity imply that the remaining fees must be paid. Indeed, the major market players have established customer retention and loyalty as a priority for 2009 and 2010.[25]

[23] Ibid, p.313.
[24] Statistic in this section from: ANACOM, 'Índice Nacional de Satisfação do Cliente', August 12, 2009.
[25] Deloitte,2009, p.19.

The market for content and network provision

Apart from service providers responsible for delivering channels, interactive and integrative applications in a commercial form, the value chain for pay-TV also comprehends content production as well as network operating activities (**Exhibit 5**). Content production is a critical part of pay-TV's value chain. Firstly, there is an inexorable need for content. For instance, the average PT customer spends 5€ per month just on Video-on-Demand services.[26] Secondly, downstream competition is highly affected by the structure of the market for content. Normally, the terms of contracts with content producers and the set values are highly dependent on the number of customers of each services provider. Service providers with larger market share have a stronger bargaining position which translates into lower content prices. Indicating the difficulty in access to content PT revealed that only when it reaches a scale between 750,000 and 800,000 will its content costs stop growing; meanwhile they rise in a per customer basis.[27] Higher scale also means higher chance of securing exclusive contracts with producers. This opportunity for exclusivity is often used by ZON and PT as a way to block each other access to content. BenficaTV and TVI24 channels, which are among the most relevant channels to customers, are exclusive to PT and ZON, respectively. Besides, ZON detains an exclusivity contract in Portugal with the top international film producers, as well as distribution rights for AXN, FOX and Nickelodeon channels. Adding to this, operators are moving upstream in the value chain to content production. In April 2008, PT announced a massive strategy of content purchasing that encompasses the acquisition of content producers. Recently, they bought Plural Entertainment, one of the biggest Portuguese entertainment content producers.[28] ZON owns the TVCine movie channels and detains 50% of SportTV channel that centralizes sports content in Portugal. Each year PT pays ZON €34 million for SportTV and access to movies, which is 40% of its total expenditure in content.[29] Firms have

[26] Portugal Telecom, 2008 Annual Report.
[27] 'Zeinal Bava vigilante contra preços abusivos praticados pela ZON', *ionline,* November 18, 2009.
[28] *RTP*, 'Grande Entrevista: Zeinal Bava', http://videos.sapo.pt/Nn5mHr4DfYEse7RCe34C, May 14, 2009.
[29] 'Quem mais abusou da posição dominante', *Jornal de Negócios,* November 20, 2009, p.32.

objected against ZON's dominant position in the market for content, as well as against the lack of regulation in this market.

Apart from content any pay-TV provider needs a network for transmission. Amid the high costs of rolling-out an entire network, new entrants have relied on renting the physical wiring of PT's installed Copper network to provide their own services. In fact, it is the only available for wholesale. Unquestionably the possibility of network renting contributed to more downstream competition in the pay-TV market. Nonetheless, abusive practices from the network owner and regulatory loopholes have constrained full downstream competition. In 2007, 2008 and 2009 the network owner was fined for abuse of dominant position. Charges involved margins squeezing and unjustified restrains on network access for two operators. Despite this, major legal loopholes remain causing non-price discrimination: maximum repair time is 16 working hours (a failure in Friday can remain unrepaired till Tuesday) and there is no need for explanation neither maximum solution time when PT considers renting unfeasible. Renting fees and network tests prices are also considered excessive.[30]

Moreover, the future access to Fibre networks will strongly affect downstream competition. As aforementioned, PT and Sonaecom are investing in Fibre networks to reach 1 million households by the end of 2009 and 2011, respectively. The investment per potential customer is highly dependent on density and is estimated at 600€ for urban areas, while for rural areas is 1600€. Thus, Fibre networks demand high market shares to reach a "pay-back". A study asked by the European Commission concluded that unless there is network sharing by the players, Portugal can only sustain one profitable Fibre network apart from ZON's Cable network. Moreover, Fibre will only be profitable in the urban and suburban clusters of Lisbon and Porto, corresponding to around 1 million households.[31] António Coimbra, Vodafone Vice President at the time, pointed the concern that: "having no space for more than one Fibre

[30] *APRITEL*, 'SPD ORALL: Contributo da APRITEL, October 09, 2009, www.apritel.org/fotos/editor2/APRITEL%20SPD%20ORALL%2020091009a.pdf.
[31] WIK-Consult Report, 2008, p.148.

network in Portugal, [unless the players share the network] we can be compromising competition".[32] Since March, 2008, APRITEL, the association of the electronic communications industry's firms, has publically defended network sharing. In November of the same year, during the 18th Congress of Communications, Vodafone Portugal proposed a model for network sharing among the service providers. Whilst it did not receive PT's approval, ZON requested more time to understand the limitations of its Cable network. Also, ANACOM has not shown any intention to review its position of no interference and is waiting for the new European Commission's regulatory package announced for 2010. France and Spain already have Fibre network sharing mechanisms.

The entry barriers imposed by access to content and network sustain the ANACOM president's view that a duopoly in pay-TV may be arising.[33] Despite this fact, Sonaecom entered the market three years before Vodafone Portugal. However, they were not able to reach 1% of market share.

5. Vodafone Portugal Background

Vodafone Portugal is a wholly-owned subsidiary of the Vodafone Group. Besides being the world's most valuable electronic communications brand and the largest electronic communications firm based on revenue, it is in the a rare example of a firm with high world coverage (**Exhibit 6**). The Vodafone Group has more than 303 million customers in more than 40 countries and a market capitalization totalizing more than €82 billion.[34]

Founded in 1992, Vodafone Portugal started as a Mobile network operator and it was not until 2007 that the firm extended its services portfolio. In that year, the firm launched a new branch, Vodafone Casa, containing a fixed internet and a fixed telephony service. At the end of 2008, Vodafone Portugal had 35.4% of the number of customers in the mobile telecommunications

[32] António Coimbra, 'O estado da nação', *Congresso das telecomunicações 09 – APDC,* Lisboa, November 19, 2009.
[33] 'Regulador alerta para duopólio da PT e ZON na TV paga', *Diário Económico*, November 09, 2009.
[34] Vodafone Group, Annual Report 2009.

market, while PT held 40.1%. The shares have remained stable throughout the later years. However, Vodafone Portugal is a leader in market share for the younger segments and has strengthened this position. Vodafone Portugal's ARPU for mobile phone customers is the highest among all firms, supported by a 1st position in market share of revenues, having overcome PT, during 2008, with 40.2% of the market. Nevertheless, Vodafone Portugal ARPU has decreased from €22.2 to €20, from April 2008 to April 2009, as a result of more pressure of ANACOM on mobile phone tariffs. During 2008, Vodafone Portugal lost €53 million due to tariff reductions.[35] Indeed, tariffs are expected to further decrease.[36] The potential for growth is limited as the penetration rate of mobile phones reaches values near 150% of the population, the 2nd highest in the European Union. Conversely, in the other markets where it is active, Vodafone Portugal's position is fragile. In the fixed internet access market the firm has around 62,000 customers, 3.5% of market share, while in the fixed telephony market it has 83,000 customers, 2% of market share.

In early 2009, for the first time in its recent history, Vodafone Portugal was experiencing declining operating revenues (**Exhibit 7**). The firm generated in the fiscal year of 2008 a net income of €275.2 million which gives it a sound financial position and a guarantee of liquidity in a market with huge and uncertain capital expenditures. During the first nine months of 2009 PT's investments mounted €471 million, while for ZON it was €144 million; this figures exceeded the 2008 values by more than 30%.

Since 1992, when Vodafone Portugal set a new world record for the fastest installation of a mobile telecommunications network, the Portuguese subsidiary has been a leader in introducing new innovations early to the market. This has resulted into leadership in customer satisfaction and brand image. In August 2009, like in the previous year, Vodafone Portugal is

[35] 'Decisão da ANACOM custa 53 milhões à PT e Vodafone', *Diário Económico*, March 11, 2009.
[36] Ferrari Carreto (ANACOM's administrator), 'Que regulação para as comunicações e Internet do Futuro?, *Congresso das telecomunicações '09 – APDC,* Lisboa, November 19, 2009.

considered the leading mobile telecommunications operator in brand image, service quality, repair services and customer loyalty.[37]

In March 2009, the Vodafone Group had announced it would establish a R&D global centre for pay-TV. It aims at maintaining the innovative reputation that the Vodafone Group has in mobile telecommunications and will work with Vodafone Germany engineers, themselves recognized for a leadership in innovation.[38] Moreover, as more of the Vodafone Group's subsidiaries move into pay-TV, the firm as a whole will negotiate the contracts with international content producers and centralize marketing communications expenses. Concerning the latter, the company has already a policy of standardizing the message of each subsidiary under the brand identity, *"Power to You"*.

6. The Launch of Vodafone Casa TV

In July 2009, Vodafone Portugal enters the pay-TV market renting PT's network, just like Sonaecom did three years before. They will use ADSL2+ technology that has a limit of 24Mbps[39] for a potential network reach of 700,000 households. Vodafone Portugal will spread the network rental expenses that it already incurs for the fixed internet business only having to install its network equipment at PT's Central Offices. As a result, Carrapatoso announced an upfront investment that, excluding content costs, will not surpass 20M.[40] As predictable, Vodafone Casa TV began with several content limitations that only scale can resolve. The service does not include TVI24 and BenficaTV channels and the offer of High-Definition channels is weaker than the competition.

Vodafone Portugal entered the market through organic growth and chose not to acquire external managers to run the new pay-TV business. Thus, the firm became exposed to significant learning economies with negative effects both on costs and benefits delivered to

[37] ANACOM, 'Índice Nacional de Satisfação do Cliente', August 12, 2009, p.176.
[38] 'Vodafone to establish R&D centre for IPTV in Eschborn Germany', *www.iptv-news.com*, February 02, 2009.
[39] It can be further upgraded for 50Mbps.
[40] 'Pay TV da Vodafone no 3º trimestre', *Oje,* March 30, 2009.

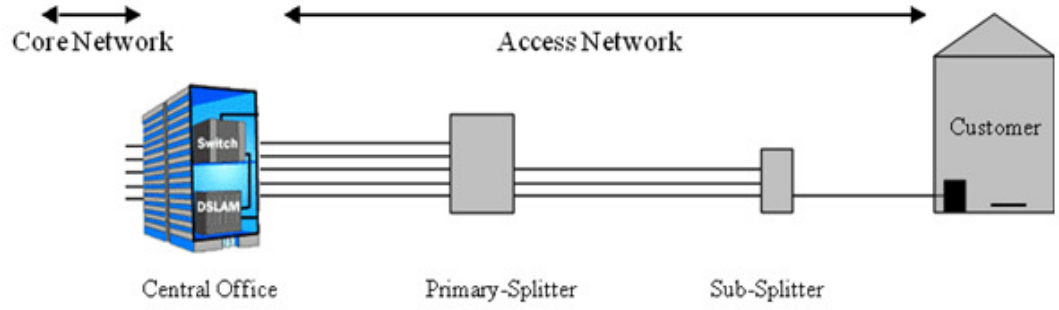
customers. Some months after the launch, Vodafone Portugal was forced to postpone new customers' service installation due to insufficient number of technical support teams and low stocks of Set-Top-Boxes. Besides, by that moment it became evident that its call-centre was failing in providing a reliable support to the new customers. It had to suffer a major restructuring. With time this failures are expected to be overcome and Vodafone Portugal does see the lack of management know-how, in the business, as a short-term disadvantage.

For technology issues Vodafone Portugal chose as a technological partner Ericson, a leading supplier of network equipment. The Set-Top-Boxes (STB), the equipment providing the user-interface to access content, will be made by Cisco. Technological experts consider it the most reliable and with highest zapping speed, STB, in the Portuguese market.[41] Besides, being a later-entrant in the market allowed Vodafone Portugal to use marketing research to develop the STB with most user-friendly interface. Vodafone Casa TV introduced three pioneer applications: the possibility to view content that appeared on TV in the last 7 days, the possibility to use the mobile phone as a remote recorder of TV content and a system for sharing music and photos with internet or mobile phone. The last two are part of a corporate strategy that encompasses the convergence between television, mobile phone and internet. In September 2009, the firm launched Vodafone 360, a service that revolutionized the convergence between internet and mobile phone. In a short-term, this service will further contemplate integration with Vodafone Casa TV.

[41] 'Serviço Vodafone IPTV', *www.reviews.com.pt*, July 23, 2009.

Appendix

Exhibit 1 Design of Portugal Telecom's Copper network



Portugal Telecom's (PT) Copper network is subdivided into an Access and a Core network. The Access network refers to the series of copper wires that connect customers to the physical building that houses electronic communications service providers' network equipment (Central Office). Typically, the Access network has two levels of splitters until it is composed by individial copper wires that reach each customer. PT's Access network can be rented by service providers based PT's wholesale offer. The Core network is a service provider's backbone connecting all the internal activities that prepare data to be distributed through the Central Office. The Central Office that lies inbetween both networks, is at the end of service providers' facilities and distributes data to customers. Traditionaly, it was just composed by a telephone-swithch making connections for fixed telephony. However, since the *Technological Convergence* Central Offices can incorporate a DSLAM that agreggates data sources into one signal to be transmitted through copper wires. As a result, internet acceess and, more recently, pay-TV could be provided through a Copper network.

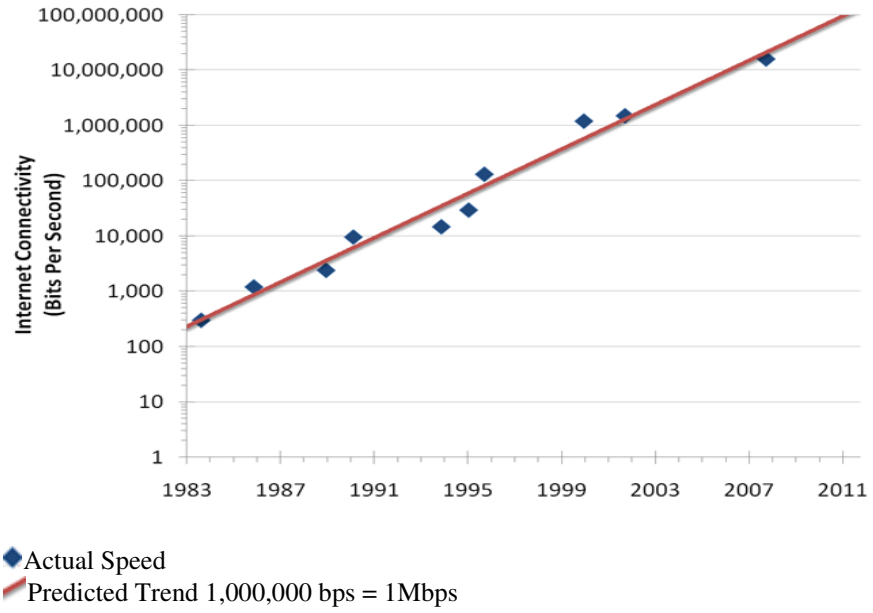
Source: Case author

Exhibit 2 Pay-TV Market Shares

	2Q2008	1Q2009	2Q2009
ZON	**74,3%**	**70,1%**	**68,4%**
ZON Multimédia	65,9%	59,1%	58,2%
ZON Açores	4,2%	3,6%	3,4%
ZON TV Cabo Madeirense	4,2%	3,8%	3,8%
TVTEL	-	2,4%	2,1%
Bragatel	-	0,5%	0,5%
Pluricanal Leiria	-	0,4%	0,3%
Pluricanal Santarém	-	0,3%	0,3%
Portugal Telecom	5,4%	16,5%	18,7%
Cabovisão	14,0%	11,7%	11,1%
TVTEL	3,4%	-	-
AR Telecom	0,9%	1,0%	1,0%
Other service providers	**2,0%**	**0,7%**	**0,8%**

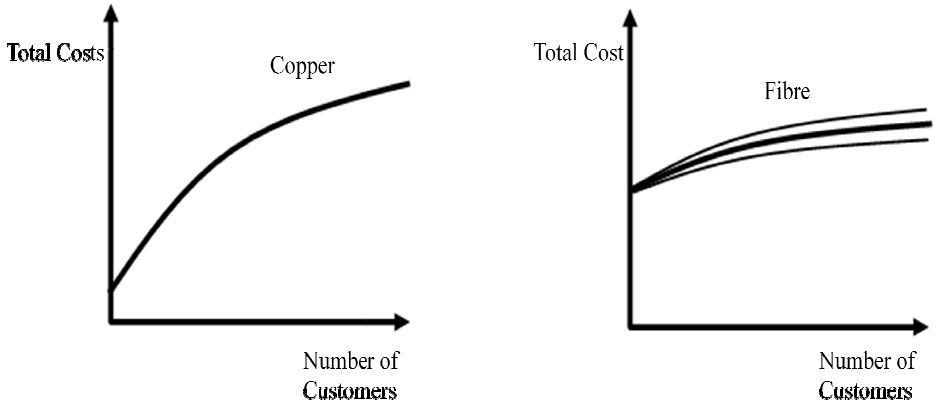
Source: ANACOM, Serviço de Televisão por Subscrição 2º Trimestre 2009,25 August 2009.

Exhibit 3 The Nielsen's Law for Household's Bandwidth Speed Requirements



Source: J. Nielsen, *"Nielsen's Law of Internet Bandwidth"*, http://www.useit.com/alertbox/980405.html, published April 5, 1998.

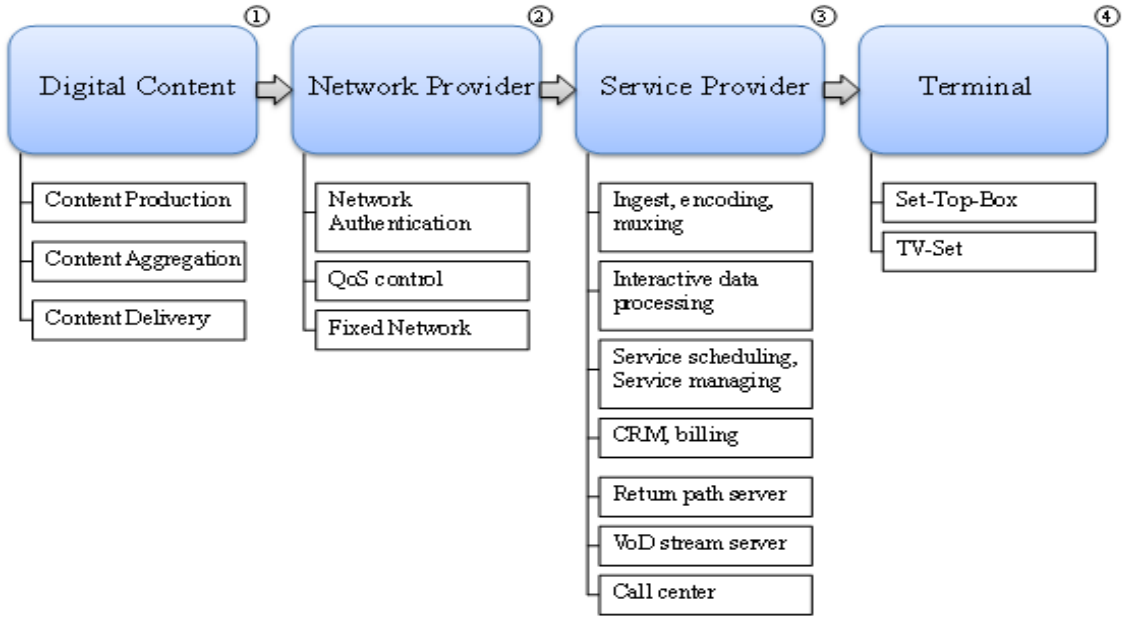
Exhibit 4 Cost Curves of Copper and Fibre networks



The cost curve for Fibre is a prediction. Average cost per subscriber varies significantly according to the dimension of the network: higher average costs as the proportion of less populated areas increases.

Source: Ovum Consulting, "Estudo sobre o impacto de Redes de Próxima Geração no mercado ", June 2008.

Exhibit 5 Value Chain for Pay-TV



①This is the step where the content is created and aggregated into a service or a channel. For some content, aggregation is done directly by service providers.
②Here the service is transmitted to subscribers across a network that must be managed. Particular data is transmitted individually for each viewer and that requires an authentication service. The Quality-of-Service (QoS) control function manages the performance of the data flow.
③This is where channels and other services are made available for distribution in the form of a commercial offer. Service management including interactive data processing, scheduling, CRM and Call Centre activities are performed. Data conversion activities of ingest, encoding and muxing are done. Equipment installed at the Central Offices such as the return path and Video-on-Demand servers are also controlled by service providers.
④The Set-Top-Box gives the interface for viewers to access to content and other services.

Source: Adapted from Hong Joo Lee, *"A review of IPTV threats based on the value chain"*, College of Business Administration, Seul National University, April 25, 2009.

Exhibit 6 Electronic Communications Companies part of the Ranking of the 20 Most Valuable Brands (US$ billion).

Rank 2009	Rank 2008	Brand	Brand value 2009	EV 2009	Brand value/ enterprise value 2009 (%)	Brand rating 2009
8	11	Vodafone	24,647	152,551	16%	AAA
14	19	at&t	19,850	222,476	9%	AA+
15	20	Verizon	18,854	162,844	12%	AA
16	44	China Mobile	17,196	153,188	11%	AA+
17	29	Orange	16.799	133.009	13%	AA

Enterprise Value (EV): measured as the sum of market capitalization and net long-term debt.

The report highlights the joint branding with local subsidiaries, as well as the global marketing and sponsorship culture that efficiently promoted excellent services throughout the World, as the main sources of the leading position.

Source: Brand Finance plc," BRANDFINANCE GLOBAL 500", June 2009.

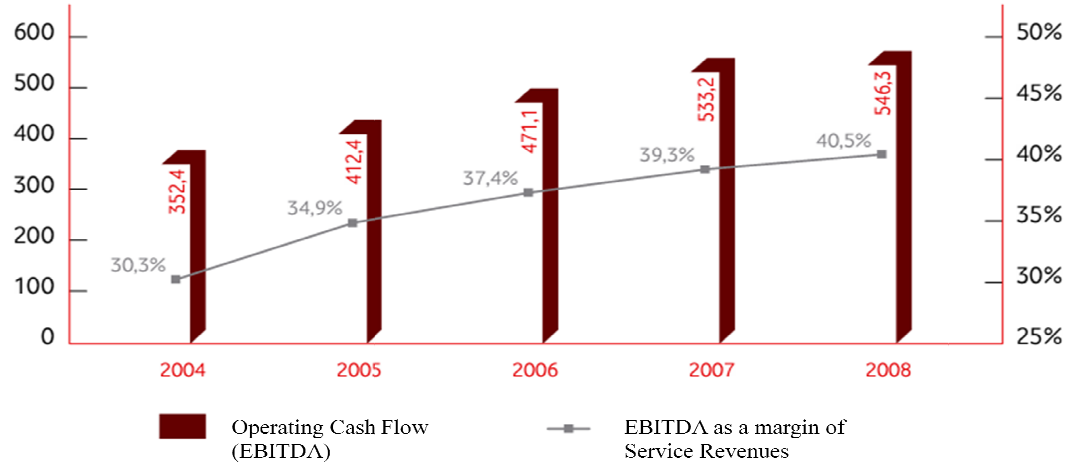
Exhibit 7 Vodafone Portugal: Selected Financial and Operating Data

a) Five-year Financial and Operating Summary; 2004-2008 (EUR million)

	2008	2007	2006	2005	2004
Operational Revenues					
Service Revenues	1.349,8	1.357,9	1.258,3	1.183,0	1.162,3
Equipment and Accessories Revenues	122,9	136,1	119,6	131,1	118,9
Other Revenues	22,9	17,3	15,1	11,0	13,5
Total Operation Revenues	**1.495,7**	**1.511,3**	**1.393,0**	**1.325,1**	**1.294,7**
Operational Expenses					
Cost of Goods Sold	203,3	217,5	201,5	217,3	231,2
SG&A	606,2	615,5	575,6	575,9	555,0
Wages and Salaries	89,0	94,3	84,8	82,8	79,9
Depreciation and Amortization	207,8	209,8	203,1	204,5	192,9
Provisions	9,2	5,0	20,5	1,0	32,5
Corporate Taxes	25,5	27,8	24,6	22,8	23,0
Other Operational Costs	0,8	0,2	0,3	0,2	0,9
Total Operation Costs	**1.141,7**	**1.170,1**	**1.110,3**	**1.104,5**	**1.115,2**
Operating Income	**353,9**	**341,2**	**282,7**	**220,6**	**179,5**
Income Before Taxes	**373,1**	**363,9**	**285,0**	**224,5**	**178,7**
Net Income	**275,2**	**269,0**	**204,4**	**169,3**	**131,7**
Operating Cash Flow (EBITDA) *	546,3	533,2	471,1	412,4	352,4
Customers in the Mobile Telecommunications Business at 31/12	5.639.293	5.209.195	4.750.557	4.276.345	3.585.711
Number of New Customers in the Mobile Telecommunications at 31/12	430.098	458.638	474.212	690.634	337.816
ARPU for Mobile Telecommunications Customers**	20,0	22,2	22,8	24,6	27,2

The information corresponds to the company fiscal year that goes from April 1 till March 31. For example, the 2008 fiscal year ends in March 31, 2009.
* Operational Income + Amortizations
**Average Revenues per Unit or Customer

b) Operating Cash Flow and Margin of Service Revenues; 2004-2008 (EUR million)



Source: Vodafone Portugal 2009 Annual Report

Case Discussion

A firm's economic profitability in a certain market depends on market economic attractiveness and on its competitive position on that market (Besanko et al.,2007). Firstly, the long-run potential rate of return in a given market is determined by market dimension and key structural features affecting the intensity of competition (Porter, 1983). Secondly, within-industry differences in performance can arise from varied abilities to create value or to drive a wider gap between customers' willingness to pay and costs (Ghemawat, 2001).

1. Market Attractiveness

The penetration rate of pay-TV in Portuguese households while lower than 50% is also lower than in other European countries. Thus, the recent steady growth in the number of subscribers is deemed enduring. In addition, there is a relevant potential to attach added-value integrative and interactive services to pay-TV and further increase ARPU. However, the limited room for interactivity and integrative services of Satellite constrains puts it at a clear disadvantage against other networks. Confirming market growth are the studies predicting annual growth rates of almost two digits for the short-term.

Apart from market dimension considerations market structure must be assessed. Porter (1979) identified the contending forces governing the level of competition and firms' margins. They are: threat of substitutes, internal rivalry, threat of entry, bargaining power of suppliers and buyers. The diverse forces have different levels of intensity. For instance, there is no evidence supporting either bargaining power of suppliers or of buyers. Beforehand, it is also relevant to note that permanent technological innovation and change of the value chain in pay-TV overtly constrains the horizon for which we can portray the competitive forces.

Firstly, threat from substitutes is itself a factor constraining market dimension. The pay-TV service does not have a close substitute. However, even if firms are able to softly

accommodate the arising threat of *Internet TV* for the basic pay-TV service, it will inevitably affect ARPU growth originated in complementary revenue streams such as Video on Demand and Pay-per-View. In fact, the threat is higher for Satellite networks as the low level of interactivity with internet does not permit the type of hybrid strategies of *Internet TV* through Set-Top-Boxes that the case refers.

Secondly, according to Saloner (2001) the strength of a firm's incentive to steal share from its rivals is a key determinant of the intensity of competition. The pay-TV service currently offered has a low level of differentiation, only based on the exclusivity of a small number of channels. Furthermore, strongly inflexible cost structures, an *ex ante* commitment to capacity and excess capacity itself, enlarge the temptation to compete on prices as firms can meet all the demand that arises (Besanko et at, 2007). However, switching costs, in some cases created by service providers, have sustained a low-price sensitivity of buyers. Also, public announcements from the players withstand a wish not to compete on prices. In parallel, upheld by a move towards Fibre there is a short-term high potential for differentiation. Pay-TV services provided by Satellite networks will remain largely undifferentiated since the potential to attach for new interactive and integrative applications is low.

Thirdly, the market is characterised by high entry barriers, that is, conditions that make it less attractive to a potential entrant than it is to incumbent firms (Saloner et al., 2001). The capital expenditures associated with Fibre networks are large relative to the size of the market, such that it is estimated that unless the network is shared only one will be viable. This supports the tendency for a duopoly with a firm on Cable, presumably ZON, and other in Fibre. In 2011 or 2012 when the need for Fibre to satisfy customers' needs becomes evident, PT and Sonaecom will tend to force prices down trying to cover at least their sunk investments, such that Cable and Satellite prices will also suffer.

Furthermore, the market has strong cross group network effects. Cross group network effects arise in two-sided markets. Pay-TV is a two-sided market in which the volume of transactions between content producers and pay-TV providers, on the one hand, and between viewers and pay-TV providers, on the other, does not depend alone on price conditions but also on service usage (Rochet and Tirole, 2006). The benefits enjoyed by subscribers and thus the volume of transactions between pay-TV providers and subscribers depends on how successfully content producers are attracted, and *vice-versa* (Armstrong, 2006). Value grows as pay-TV providers match demand from both sides. The network effects develop as this: Portugal Telecom and ZON with installed customer bases are more prone to obtain contracts with content producers and thus will provide higher utility to customers. With more customers the chance to obtain further contracts is even higher, and so on and so forth. Contract fees will be higher the lower the market share, rise in a per-customer basis, and only around 750,000 customers stop growing. In addition, higher customer base means higher chance of exclusivity. Thus, either entrants will face higher costs or will provide lower content variety and benefits, or both.

Thirdly, the players currently in the market are integrating upstream, exerting control over essential content. ZON controls valuable movies and sports content which does not have a substitute and thus must be acquired by new entrants. This dominant position of ZON translates in huge prices; PT spent during 2008 more than 30% of Vodafone Portugal net income, in the same year, to provide movies and SportTV to its customers. In addition, PT has defined as a top priority the acquisition of content producers. Therefore, the conditions defining the access to essential content represent a cost and benefit disadvantage for possible entrants *vis-à-vis* incumbent firms. In addition, the possibility of foreclosure is even a stronger constraint on entrants' delivered benefits.

Finally, due to transmission limitations of Satellite and the lack of incentives to invest in Fibre, renting PT wired network stands as the sole viable alternative for possible entrants. However,

there is evidence of price and non-price discrimination in the access for the network. The prospects of high costs and low service quality can successfully restrain entry.

2. Vodafone Portugal Competitive Position

Profitability does not only vary across industries. A firm's competitive position defines the extent to which it can outperform competition. According to Michael Porter (1980) the strategic options to obtain competitive advantage entail two choices: "a firm can seek lower costs than competitors; or it can differentiate its product and auxiliary services providing customers with a higher quality option than do competitors"; or it can do both. There are, in the literature, two research streams assessing the fundamental determinants of sustainable competitive advantages.

Firstly, the *resource-based view* emphasises firm specific unique and hard-to-replicate resources (Cool, Almeida Costa & Dierickx, 2002).[42] There are valuable attributes or attribute sets that because of unequal distribution, inimitability or simply imperfect mobility, are able to sustain lasting competitive advantages. Adding to this, considering that resources are deployed to support a specific strategy, a competitive advantage only arises unless there is a substitute resource to develop that same strategy.

Vodafone Portugal lack of managerial know-how on pay-TV as well as the advantages associated with the unique characteristics of its Set-Top-Box, share the same short-term nature. Both Vodafone Portugal and its competitors have the potential to dissipate the competitive disadvantages that the gap in these two resources poses.

However, varied literature points positive reputations of firms among customers or favorable brand image as sources of enduring competitive advantage (M.Porter, 1980; J.Barney, 1991;

[42] "Resources are tangible and intangible assets firms use to conceive of and implement their strategies" (Barney & Arikan, 2001)

Saloner, 2001). Firstly, Vodafone Portugal has behind it the brand name of the Vodafone Group, itself the world's most powerful brand in the electronic communications industry. Moreover, it is a leader in brand image and innovation in the mobile telecommunications market, which are, in fact, the characteristics that customers in the pay-TV market value the most when choosing the service provider. The pay-TV market is also referred as the market in electronic communications with the lowest satisfaction levels and where firms have poorer performance in brand image. This indicates that positive reputations are not in general shared by the providers and thus there is a potential for Vodafone Portugal to outperform them. Usually, reputations depend on particular difficult-to-replicate, casual ambiguities or complex historical settings and hence can lead to sustainable competitive advantages.

Secondly, the other research stream on the fundamentals of competitive advantage focuses on *privileged market positions* that can ensure the sustainability of a competitive advantage "not because rival firms cannot replicate a resource bundle, but because it is not in their interest" (Cool, Almeida Costa and Dierickx, 2002).

The entry barriers referred when analyzing market attractiveness represent sources of competitive disadvantage for entrants *vis-à-vis* incumbents. The minimum profitable scale of a Fibre network in Portugal is large compared to total market demand. Also, PT and Sonaecom investment in Fibre is sunk, irreversible. These two conditions together mean that in 1 or 2 years' time, it will not be on Vodafone Portugal interest to invest to stay in the market. This results from the fact that by the end of this time frame, customers' needs will only be satisfied through Fibre, Only if ANACOM reconsiders its current position will Vodafone Portugal's incentives change. Whereas we cannot guarantee that network sharing will take place in Portugal, both the European Commission's studies on economics of Fibre and the network sharing already taking place in countries like France and Spain, increase the probability. For now, strong cross group network effects, cost and service quality disadvantages accruing from an offer based on PT's network and difficulties in access to content could limit Vodafone

Portugal expansion in the market. The fact that, Sonaecom facing the same source of competitive disadvantages has not been able to acquire even 1% of market share in three years, supports this fear.

However, Vodafone Group's global positioning can be a critical source of sustainable competitive advantage for the Portuguese subsidiary. First of all, the investment in the new R&D centre must be seen as a commitment that the company as a whole is entering in the pay-TV business. Having on Vodafone Portugal's behalf one of the world largest companies in electronic communications procuring content from international producers supports a favorable competitive position. Noticeably, the benefits from this stronger bargaining position will not arise for content targeted at Portuguese audiences. However, Vodafone Portugal will have access in privileged conditions to movies from leading international studios as well as international sports content, which are indeed, a priority for service providers. Therefore, Vodafone Group's global positioning can successfully help the Portuguese subsidiary in fighting the incumbency *privileged market position* advantages based on strong cross group network effects. Considering that the Vodafone Group bargaining position cannot be replicated by other firms in the Portuguese market, it will even bring better access to content than the one incumbents' have. Better access means lower prices and higher variety and thus a sustainable competitive advantage.

Besides, the Vodafone Group is planning a centralization of its pay-TV R&D activities, which will bring, at the end, strong economies of scale. The pay-TV market is under permanent technological change. As a result, expenses in R&D have a large weight in firms' cost structures. For Vodafone Portugal this represents a sustainable advantage on costs. Furthermore, the Vodafone Group move towards pay-TV will bring economies of scale on marketing communications expenses, facilitated by the company's strategy of brand unity across the subsidiaries. For instance, not only does a unified brand message mean shared costs in sponsorship of high-reach international events but in advertising conception, as well. A high

investment in marketing communications in order to obtain brand awareness is particularly necessary in the first months after the service launch.

Finally, as the fixed-mobile convergence in networks, and integrative services between pay-TV and mobile phones reach the market, Vodafone Portugal's strong position on the mobile telecommunications market is a potential source of competitive advantage. Though the market of mobile telecommunications is shrinking, the integrative services that Vodafone Portugal brought already to pay-TV will be more valuable the stronger is a firms' position in both markets. Obviously, this is only a source of competitive advantage *vis-à-vis* other players than PT. A more deep analysis on the sustainability of this competitive advantage must cover ZON's potential to achieve market share in mobile communications which could not be the focus of this case-study. For now, it is relevant to note that in the last 15 years market shares in mobile communications remained noticeably stable.

3. Conclusion Note

In the pay-TV market both cross-group network effects and the characteristics of the market for content protect incumbency. However, a thorough assessment of Vodafone Portugal's potential for profitability uncovered sustainable sources of competitive advantage. A favourable brand image, a strong position on mobile telecommunications and fundamentally, the advantages accruing from Vodafone Group's global positioning, can successfully lead Vodafone Portugal to a sustainable competitive edge.

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Note: Apart from the sources mentioned above, not only are the materials contained in the case-study based on interviews with Vodafone Portugal Home Communications department mangers, but also on other technological and market insights resulting from interviews with various experts, as well. In addition, the understanding of the technological complexity of the market was based in a set of Electronics Engineering papers. Even though I chose not to include it on this reference list for its extension, I can afterwards provide those sources to anyone interested.

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